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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,717	06/27/2003	Steven J. Martin	58633US002	9412

32692 7590 07/19/2005

3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER	
MARKHAM, WESLEY D	

ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 07/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/607,717	MARTIN ET AL.
	Examiner	Art Unit
	Wesley D. Markham	1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

HC

DETAILED ACTION

Response to Amendment

1. Acknowledgement is made of the amendment filed by the applicant on 5/31/2005, in which independent Claim 1 and 26 were amended to require that the previously applied antisoiling coating comprise a perfluoropolyether siloxane having a molecular weight of at least 1000 that is chemically bonded to the antireflective coating (ARC). **Claims 1 – 26** remain pending in U.S. Application Serial No. 10/607,717, and an Office action on the merits follows.

Drawings

2. The one (1) sheet of formal drawings filed by the applicant on 6/27/2003 is acknowledged and approved by the examiner.

Claim Observations

3. Amended independent Claims 1 and 26 require, in part, that the previously applied antisoiling coating comprise a perfluoropolyether siloxane having a molecular weight of at least 1000 that is chemically bonded to the antireflective coating (ARC). However, it is clear from the applicant's disclosure (page 12, lines 14 – 30) that the

precursor used to apply the perfluoropolyether siloxane coating has a MW of at least 1000 (not the coating itself), and the claims have been interpreted as such.

Claim Objections

4. Claim 16 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Specifically, Claim 16 requires that the previously deposited antisoiling coating comprise a siloxane, but this limitation is already present in Claim 1 (from which Claim 16 depends).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order

for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 2, 4 – 8, 10 – 23, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Invie et al. (USPN 6,277,485 B1) in view of either the applicant's admitted prior art (AAPA) or Nippon Sheet Glass (referred to hereinafter as Nippon) (JP 2002-187740 A), in further view of Birch (US 2004/0043142 A1).
8. Regarding independent **Claims 1 and 26**, Invie et al. teaches a method for applying an antisoiling coating on an article (title and abstract), the method comprising providing an article comprising an optical substrate (Col.1, lines 6 – 14, Col.3, lines 46 – 52, and Col.4, lines 32 – 56), specifically a polymeric optical substrate (Col.3, lines 46 – 52, Col.4, lines 33 – 56) and an antireflective coating (ARC) disposed on a surface of the optical substrate (abstract, Col.1, lines 15 – 62, Col.2, lines 52 – 55, Col.3, lines 46 – 67, Col.4, lines 1 – 32, Col.5, lines 51 – 67, and Col.6, lines 1 – 8), and applying an antisoiling coating comprising silicon that is disposed on at least a portion of the ARC, wherein the ARC is between the optical substrate and the antisoiling coating (abstract, Col.1, lines 53 – 67, Col.2, lines 24 – 63, Col.5, lines 51 – 67, Col.6, lines 34 – 67, and Cols.7 – 10 (for the specifics of the antisoiling composition and its application)). The ARC comprises sputter coated metal oxide films that are relatively porous and consist of clusters of particles (Col.4, lines 23 – 32), as required by the claims. This previously applied antisoiling coating of Invie et al. comprises a perfluoropolyether siloxane applied from a precursor having a MW of

at least 1000, the coating being chemically bonded to the ARC (Abstract, Col.3, lines 23 – 31, Col.6, lines 34 – 46, Col.9, lines 3 – 38). Invie et al. does not explicitly teach replacing the aforementioned antisoiling coating by treating the article with a plasma under vacuum conditions to remove the previously applied antisoiling coating from the ARC and disposing a new antisoiling coating on the ARC of the article. However, the AAPA teaches that, in the art of antisoiling coatings deposited on ARC-coated optical substrates, the antisoiling coatings may need to be removed and replaced at times, such as when a previously applied antisoiling coating becomes defective or partially removed during the use of the article ("Background" section of the applicant's specification, page 2, lines 11 – 15). Nippon also teaches that, in the art of water-repellent fluorosilane coatings (i.e., antisoiling coatings) on optical substrates (e.g., glass or silica-coated glass), the aforementioned coatings deteriorate over time and must be removed (i.e., to provide a clean surface) and replaced (paragraphs [0010], [0020], [0021], [0027], [0057], and [0070] of the translation). Therefore, it would have been obvious to one of ordinary skill in the art to remove the previously deposited antisoiling coating of Invie et al. from the ARC (i.e., when such coating deteriorates and/or becomes defective over time and through use) and dispose a new antisoiling coating on the ARC of the article of Invie et al. (as taught by either the AAPA or Nippon) with the reasonable expectation of successfully and advantageously renewing the antisoiling capability of the ARC-coated optical substrate, thereby prolonging the use of the aforementioned substrate (i.e., due to the renewed antisoiling coating). The combination of Invie et al. and

either the AAPA or Nippon does not explicitly teach removing the antisoiling coating by treating the article with a plasma under vacuum conditions. However, Birch et al. teaches a method of removing a hydrophobic coating from a glass substrate by plasma cleaning under vacuum conditions (Abstract, paragraphs [0012] and [0048] – [0056]). Removing the coating by the vacuum plasma cleaning process of Birch et al. has the following advantages: (1) effective removal of a wide variety of coatings (paragraphs [0012], [0037], and [0040]), (2) no generation of liquid waste (paragraph [0012]), (3) the ability to remove thicker coatings while leaving behind virtually no visible residue (paragraph [0014]), and (4) inexpensive operation, generates no regulated waste streams, and produces clean surfaces in very short time periods (paragraph [0054]). Further, the vacuum used in the plasma cleaning facilitates uniformity through dispersion of the plasma and therefore quickly and effectively cleans the entire surface of the material simultaneously and evenly (paragraph [0056]). Therefore, it would have been obvious to one of ordinary skill in the art to remove the antisoiling coating of Invie et al. by treating the article with a plasma under vacuum conditions (as taught by Birch et al.) with the reasonable expectation of successfully and advantageously removing the coating by using a method that does not generate waste, leaves behind virtually no residue, is inexpensive to operate, and produces clean surfaces in very short time periods and with a high uniformity. Further, one of ordinary skill in the art would have reasonably expected to perform the aforementioned plasma cleaning / coating removal process on a porous, antireflective coated substrate without damaging the antireflective coating (e.g.,

without reducing its effectiveness) based, at least in part, on the teaching of Invie et al. that sputter coated (i.e., porous) antireflective film-coated substrates can successfully be exposed to plasma cleaning without any apparent damage (Col.19, lines 59 – 67, Col.20, lines 1 – 37; see also Woodruff et al. (USPN 6,469,685) (Col.5, lines 18 – 23) and Dickey et al. (USPN 5,372,874), which are simply cited to show that the "CDAR" antireflective coated glass that is successfully plasma cleaned by Invie et al. comprises sputter-coated metal oxide layers).

9. The combination of Invie et al., either the AAPA or Nippon, and Birch et al. teaches all the limitations of **Claims 2, 4 – 8, 10 – 23, and 25** as set forth above in paragraph 8 and below, including a method wherein / further comprising:

    - Claim 2: The pressure during the plasma treating is in the range of 0.05 to 0.5 mm Hg (paragraph [0053] of Birch et al.).
    - Claim 4: The plasma treating leaves the ARC and the optical substrate intact. Specifically, Birch et al. makes no mention or suggestion that the plasma cleaning process used to remove a coating on an article significantly damages or modifies the underlying substrate. Additionally, Nippon teaches that, in the art of removing a water repellent film from a substrate by using a plasma, the underlying substrate should be left intact (paragraph [0027]). Therefore, it would have been obvious to one of ordinary skill in the art to perform the plasma cleaning process of the combination of Invie et al., either the AAPA or Nippon, and Birch et al. under conditions such that the underlying substrate (i.e., the ARC-coated optical substrate of Invie et al.) is

left intact because by doing so, one would insure that the ARC-coated substrate is not damaged, thereby achieving the goal of the combination of Invie et al., either the AAPA or Nippon, and Birch et al. (i.e., simply replacing a damaged or worn antisoiling coating on an ARC-coated substrate).

- Claims 5 and 6: The treating removes less than 500 A of the antisoiling coating (Claim 5), particularly less than 100 A of the antisoiling coating (Claim 6). Specifically, Invie et al. teaches that the antisoiling coatings have a thickness of about 15 A to about 150 A (Col.2, lines 56 – 63). Therefore, it would have been obvious to one of ordinary skill in the art to remove less than 100 A of the antisoiling coating of Invie et al. because, when the coatings have an overall thickness of less then 100 A (e.g., 15 A, as taught by Invie et al.), no more than the thickness of the coating can be removed. For example, when a 15 A coating is used as the antisoiling coating in the process of Invie et al., the amount of coating removed by the plasma process is at most 15 A (i.e., the entire coating), which is a value within the applicant's claimed range.
- Claim 7: Washing the article, placing the article in an ultrasonic bath, chemically treating the article, or a combination thereof prior to the plasma treating (Col.11, lines 1 – 4 of Invie et al.).
- Claim 8: The article is an optical lens (Col.1, line 7 of Invie et al.).
- Claims 10 – 12: The ARC comprises a metal oxide, metal sulfide, metal halide, metal nitride, or combination thereof, particularly at least one metal

oxide layer, particularly wherein an outer layer of the ARC comprises silicon oxides (Col.4, lines 8 – 31, Col.5, lines 54 – 57 of Invie et al.).

- Claims 13 and 14: The plasma is produced using argon, xenon, air, water, oxygen, or a combination thereof, particularly air (paragraphs [0049] and [0050] of Birch et al.).
- Claims 16, 18, 21, and 22: The antisoiling coating comprises a siloxane, particularly a fluorinated (di)alkylsiloxane, perfluoropolyether siloxane, or combination thereof, particularly produced from a fluorinated silane precursor comprising a compound having the formula claimed by the applicant in Claims 21 and 22 (abstract, Col.2, lines 29 – 51, Col.6, lines 34 – 46 and 64 – 67, and Cols.7 – 9 of Invie et al., which describe in detail the silane precursors and siloxane coatings claimed by the applicant).
- Claims 15 and 17: The antisoiling coating(s) has/have a static water contact angle of at least 80 degrees and is/are hydrophobic and/or oleophobic. The combination of Invie et al., either the AAPA or Nippon, and Birch et al. does not explicitly teach these limitations. However, as set forth in the discussion of Claims 16, 18, 21, and 22 immediately above, the antisoiling coatings taught by Invie et al. are the same as the applicant's claimed and disclosed coatings. Therefore, the antisoiling coatings taught by Invie et al. would have inherently possessed the applicant's claimed water contact angle, hydrophobicity, and oleophobicity (i.e., because these properties are simply inherent properties of a coating that are determined by the coating material used – since the same

coating material is used, the coatings would have the same physical and chemical properties).

- Claims 19 and 20: The disposing comprises providing a solution of a fluorinated silane or fluorinated siloxane precursor in an inert solvent, particularly an alkyl perfluoroalkyl ether, and immersing the plasma treated article into the solution (Col.9, lines 39 – 54, and Col.10, line 19 of Invie et al.).
- Claim 23: The disposing comprises placing a fluorinated silane or fluorinated siloxane precursor on a fabric, and transferring the precursor from the fabric to a surface of the plasma treated article. Specifically, Invie et al. does not explicitly teach this limitation. However, the fluorinated silane or fluorinated siloxane precursor application method used by Invie et al. does not appear to be particularly limited or critical (Col.10, lines 17 – 25). Nippon teaches that it was known in the art at the time of the applicant's invention to apply a water repellent fluorinated silane treatment solution to a coated glass substrate by placing the solution on a cotton cloth (i.e., a fabric) and then transferring the solution from the fabric to a surface of the article (paragraphs [0057] – [0059]). Therefore, it would have been obvious to one of ordinary skill in the art to apply the antisoiling coating of Invie et al. by placing the fluorinated silane or fluorinated siloxane precursor of Invie et al. on a fabric, and transferring the precursor from the fabric to a surface of the plasma treated article with the reasonable expectation of success and obtaining similar

results (i.e., successfully re-applying the antisoiling coating to the ARC-coated optical article, regardless of the specific method used to apply the coating).

- Claim 25: Curing the new antisoiling coating (Col.10, lines 56 – 67 of Invie et al.).

10. Claims 4 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Invie et al. (USPN 6,277,485 B1) in view of the applicant's admitted prior art (AAPA), in further view of Birch (US 2004/0043142 A1), and in further view of Nippon.

11. The combination of Invie et al., the AAPA, and Birch teaches all the limitations of **Claims 4 and 23** as set forth above in paragraph 8, except for a method wherein the plasma treating leaves the ARC and the optical substrate intact (Claim 4), and the disposing comprises placing a fluorinated silane or fluorinated siloxane precursor on a fabric, and transferring the precursor from the fabric to a surface of the plasma treated article (Claim 23). However, the aforementioned limitations would have been obvious to one of ordinary skill in the art in view of Nippon for the reasons set forth above in paragraph 9 (see the discussions of Claims 4 and 23).

12. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Invie et al. (USPN 6,277,485 B1) in view of <u>either</u> the applicant's admitted prior art (AAPA) or Nippon (JP 2002-187740 A), in further view of Birch (US 2004/0043142 A1), and in further view of Patrick et al. (USPN 5,474,648).

13. The combination of Invie et al., either the AAPA or Nippon, and Birch teaches all the limitations of **Claim 3** as set forth above in paragraph 8, except for a method wherein the plasma during the treating has an RF power less than about 30 W. Specifically, Birch teaches using an RF plasma for the vacuum plasma removal of the coating (paragraph [0054]) but is silent regarding the RF power utilized. Patrick et al. teaches that, in the art of RF plasma etching or removing of material, the amount of power in the plasma chamber greatly affects process conditions such as etching rate and other process variable parameters and therefore should be controlled to improve etch rate uniformity and consistency (abstract, Col.2, lines 13 – 45, Col.5, lines 9 – 25). In other words, Patrick teaches that RF power in a plasma process is a controllable result / effective variable that greatly affects the overall process (i.e., other process conditions, etching rate, etc.). Therefore, it would have been obvious to one of ordinary skill in the art to optimize and control the RF power in the plasma film removal process of the combination of Invie et al., either the AAPA or Nippon, and Birch as a result / effective variable through routine experimentation. The exact RF power utilized would, of course, depend on the desired film removal rate, the thickness of the film, etc.

14. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Invie et al. (USPN 6,277,485 B1) in view of <u>either</u> the applicant's admitted prior art (AAPA) or Nippon (JP 2002-187740 A), in further view of Birch (US 2004/0043142 A1), and in further view of Matsuo et al. (USPN 4,687,707).

15. The combination of Invie et al., either the AAPA or Nippon, and Birch teaches all the limitations of **Claims 8 and 9** as set forth above in paragraph 8, except for a method wherein the article is an optical / ophthalmic lens. However, it is clear from Invie et al. that the optical article comprising the ARC coating and the antisoiling coating can be a lens in general (Col.1, line 7). Matsuo et al. teaches that ARCs and antisoiling coatings are typically deposited on optical lenses such as eyeglass lenses (i.e., ophthalmic lenses) so that such lenses exhibit desirable antireflective and antisoiling properties (abstract, Col.1, lines 5 – 26, and Col.8, lines 8 – 14). Therefore, it would have been obvious to one of ordinary skill in the art to perform the process of the combination of Invie et al., either the AAPA or Nippon, and Birch on eyeglass lenses (i.e., ophthalmic lenses) with the reasonable expectation of successfully obtaining the benefits of performing the process (i.e., renewing the antisoiling coating on a lens) on a well-known species of lens (i.e., an eyeglass lens) out of the broader genus of lenses generally taught by Invie et al.

16. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Invie et al. (USPN 6,277,485 B1) in view of <u>either</u> the applicant's admitted prior art (AAPA) or Nippon (JP 2002-187740 A), in further view of Birch (US 2004/0043142 A1), and in further view of Goodwin (USPN 5,707,740).

17. The combination of Invie et al., either the AAPA or Nippon, and Birch teaches all the limitations of **Claim 24** as set forth above in paragraph 8, except for a method further comprising acid activating a surface of the plasma treated article (i.e., the article

having the worn or deteriorated antisoiling coating removed) prior to disposing the new antisoiling coating thereon. However, Goodwin teaches that it is desirable to acid activate a surface of a coated optical substrate prior to depositing a water repellent silane or siloxane coating thereon in order to improve the durability of the subsequently deposited water repellent coating (abstract, Col.1, lines 20 – 24 and 53 – 67, Col.2, lines 30 – 45, Col.3, lines 47 – 67, Col.4, lines 63 – 67, and Col.5, lines 26 – 35 and 59 – 64). Therefore, it would have been obvious to one of ordinary skill in the art to acid activate the surface of the plasma treated article (i.e., the article having the worn or deteriorated antisoiling coating removed) of the combination of Invie et al., either the AAPA or Nippon, and Birch prior to disposing the new antisoiling coating thereon with the reasonable expectation of successfully and advantageously improving the durability of the coating, thereby increasing the amount of time before the antisoiling coating is deteriorated and needs to be removed and replaced.

Response to Arguments

18. Applicant's arguments filed on 5/31/2005 have been fully considered but they are not persuasive.

19. The applicant argues that the prior art as a whole, including Invie et al., Nippon Glass, the AAPA, and/or Birch does not teach or suggest that perfluoropolyether siloxane coatings (MW > 1000) that are chemically bonded to the surface of an ARC can be removed by using a plasma. Specifically, the applicant states that although

Birch discloses the removal of some fluorinated materials from a glass substrate using a plasma treatment, the fluorinated materials are not perfluoropolyether siloxanes. The only fluorinated material taught by Birch that contains silicon is the fluorosilane monolayer prepared from a precursor that does not include a perfluoropolyether group and has a MW of about 580, which is significantly less than 1000. The applicant states that it is not obvious from the combination of references that a different type of fluorinated material (chemically bonded perfluoropolyether siloxane coatings) with a higher MW could be removed from the surface of a substrate, particularly an antireflective coating without damaging the antireflective coating, the substrate, or both.

20. In response, this argument is not convincing. The examiner begins by noting that the applicant's statement that, "There is no discussion in either of these references as to any method that remotely resembles a plasma treatment" (page 8, lines 2 – 3, of the 5/31/2005 response) appears to be inaccurate. Specifically, Nippon Glass explicitly teaches that a substrate, including a <u>polymeric substrate</u> (see paragraph [0042]) and a substrate that has been <u>coated with a silica layer</u> (see paragraphs [0055] – [0062]), silica being one of the ARC metal oxide layers taught by Invie et al. (Col.4, lines 8 – 32) and claimed by the applicant, can be successfully treated with a plasma to remove an overlying antisoiling layer from the surface of the substrate without damaging the underlying layer (i.e., leaving the underlying layer intact) (paragraphs [0010], [0020], [0021], [0027], [0057], and [0070] of the translation). The antisoiling layer of Nippon Glass that is successfully removed by plasma is based on a

fluorinated alkoxysilane (paragraph [0057]), which would be expected to chemically bond with the underlying silica layer of Nippon Glass due to the alkoxysilane end groups (see, for example, Col.9, lines 23 – 34 of Invie et al.). Further, Birch et al. teaches that vacuum plasma treatment can effectively remove of a wide variety of coatings (paragraphs [0012], [0037], and [0040]) and has the ability to remove thicker coatings while leaving behind virtually no visible residue (paragraph [0014]). Some specific examples of the hydrophobic coatings successfully removed by the vacuum plasma treatment of Birch et al. include <u>cured polymeric coatings</u> (paragraphs [0035] and [0045]) such as polycarbonate, polystyrene, polyurethane, polyethylene, polyester, polyethylene chloride, PMMA, and poly(dimethyl siloxane) (Table II and paragraph [0040]). Based on the teachings discussed above, which clearly indicate that plasma treatment can be used to successfully remove a wide variety of polymeric (i.e., high MW), cured, and chemically bonded coatings, including a siloxane coating, from the surface of a substrate (including a silica coated substrate and a polymeric substrate), one of ordinary skill in the art would have had a reasonable expectation of success in removing the chemically bonded antisoiling siloxane coating from the surface of the ARC of Invie et al. using a vacuum plasma treatment. Additionally, Invie et al. explicitly teaches plasma cleaning the surface of a porous ARC-coated substrate without any apparent damage to the coating or associated degradation of its optical properties (see paragraph 8 above for details), and Nippon Glass explicitly teaches removing a fluorinated alkoxysilane antisoiling coating (i.e., a coating similar to that of Invie et

al.) from the surface of a silica coating without damaging the coating (see the discussion of Nippon Glass above). These teachings would lead one of ordinary skill in the art to conclude that a plasma cleaning process in general, including a vacuum plasma cleaning process (as taught by Birch et al.), would be suitable for removing a coating from a porous ARC-coated (polymeric) substrate without damaging the substrate or the ARC. Please note that prior art can be modified or combined to reject claims as *prima facie* obvious as long as there is a reasonable expectation of success (In re Merck & Co., Inc., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986)) – absolute predictability is not required (MPEP 2143.02).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The examiner reiterates that Jallouli et al. (US 2004/0253369 A1) (effective filing date of 6/13/2003) teaches a method of removing and replacing an antisoiling coating such as that claimed by the applicant on an ARC-coated lens wherein the removal step is performed with an activated chemical species (e.g., an oxygen plasma) at about atmospheric pressure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley D Markham whose telephone number is (571) 272-1422. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wesley D Markham
Examiner
Art Unit 1762

wm

WDM

TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER